

REMARKS

Summary of the Office Action

In the Office Action, claims 1-2 and 4-9 were rejected under 35 U.S.C. § 102(e), as allegedly being anticipated by U.S. Patent No. 6,274,971 to *Sugimoto et al.*, hereinafter ("*Sugimoto*").

Summary of the Response to the Office Action

Applicant thanks the Examiner for the indication that the previously applied references of record do not make obvious the present invention. Claims 1, 2, and 4 are amended to better define the present invention. Accordingly, claims 1-2 and 4-9 are pending for further consideration.

All Subject Matter Complies with 35 U.S.C. § 102(e)

Claims 1-2 and 4-9 were rejected under 35 U.S.C. § 102(e) as allegedly being unpatentable over *Sugimoto*. These rejections are respectfully traversed for at least the following reasons.

With regard to the rejections under 35 U.S.C. § 102(e), independent claims 1 and 2 recite the features of "11 to 15 mol% in total of alkaline metal components Na, K, and Li in terms of Na₂O, K₂O, and Li₂O, respectively." Applicant respectfully submits at least these features of claims 1 and 2 are not disclosed, taught or suggested by *Sugimoto*.

Sugimoto shows a glaze layer formed on the surface of an alumina-based insulator of a resistor spark plug. See the Abstract of *Sugimoto*. The glaze layer contains a total amount of co-added alkali metal components in a range of 6-14% by weight. If the total amount is less than 6%

by weight, the glaze softening point increases to such a degree that glost firing may not occur at the prescribed temperature. Further, if the total amount is greater than 14% by weight, the insulation performance of the glaze is lowered, which can lead to impaired flashover prevention. See col. 3, lines 56-65 of *Sugimoto*.

In regards to independent claims 1 and 2, Applicant respectfully submits that *Sugimoto* does not disclose or teach each and every feature of Applicant's claims and therefore the rejections under 35 U.S.C. § 102(e) should be withdrawn. Table 5 (attached) shows a conversion table that converts the mass weight percentages of Table 5 of *Sugimoto*, into the molar weight percentages of the present application for comparison purposes. The conversion table shows that none of the disclosed embodiments/examples of *Sugimoto* anticipate the molar weight percentages as recited in claims 1 and 2 of the present application. For example, embodiments 1, 2, 9, 10, 11, 12, 14, 15, 16, 18, 19, and 20 of Table 5 of *Sugimoto* do not disclose or teach the "35 to 55 mol% of a Si component in terms of SiO₂" features as recited in claims 1 and 2. Further, of the remaining embodiments (3, 4, 5, 6, 7, 8, 13, 17, and 21) of Table 5 of *Sugimoto*, none disclose or teach the "11 to 15 mol% in total of at least one of alkaline metal components of Na, K, and Li in terms of Na₂O, K₂O, and Li₂O, respectively," features as recited in claims 1 and 2. See the converted mol% Table 5 attached. Thus, none of the embodiments (1-21) teach or suggest the claimed features of the present invention. Because *Sugimoto* does not show the recited features, it cannot anticipate the present invention.

As pointed out in MPEP § 2131, a claim is anticipated by a prior art reference under 35 U.S.C. § 102(e) only if each and every element as set forth in the claim is found. *Verdegaal Bros.*

v. Union Oil Co. of California, 2 USPQ2d 1051 (Fed. Cir. 1987). Therefore, Applicant respectfully asserts that the rejections under 35 U.S.C. § 102(e) should be withdrawn because *Sugimoto* does not teach or suggest each feature of independent claims 1 and 2.

Additionally, it is further respectfully submitted that dependent claims 4-9 are also allowable insofar as they recite the patentable combinations of features recited in independent claim 1, as well as reciting additional features that further distinguish over the applied art.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the response, the Examiner is invited to contact the Applicant's undersigned representative to expedite prosecution.

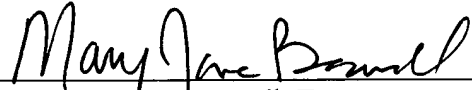
If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. §1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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TABLE 5
conversion from wt% to mol%
of Table 5 from U.S. Patent 6,274,971

TABLE 5 of U.S. Patent 6,274,971

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
SiO ₂	60	26.5	24.7	28.8	31.9	33.7	35.0	37.8	38.4	23.1	22.1	27.4	42.3	17.4	23.9	25.3	32.4	26.7	21.7	19.7	29.8
B ₂ O ₃	70	21.6	24.1	27.7	25.4	21.9	29.0	26.9	21.5	22.1	21.6	23.5	21.5	38.1	21.0	27.4	17.1	26.2	29.0	25.2	25.1
Na ₂ O	82	4.3	5.3	3.5	2.8	3.1	0.7	0.7	0.7	4.5	4.5	4.1	1.4	2.4	5.9	1.8	2.6	4.3	4.1	2.5	2.6
K ₂ O	94	4.5	4.8	3.7	3.3	2.4	0.5	0.5	0.1	0.0	0.0	4.2	5.1	2.0	4.9	1.2	2.5	3.2	4.5	2.8	3.8
Li ₂ O	30	0.9	0.5	0.1	1.5	0.1	0.1	0.4	0.1	0.8	0.8	0.0	0.5	2.1	3.7	1.8	1.3	0.7	0.6	0.2	0.1
BaO	153	12.7	17.4	12.8	13.2	13.8	12.2	12.2	16.5	16.1	17.6	22.7	15.4	12.7	17.8	12.9	15.6	15.9	8.0	25.0	18.7
ZnO	81	21.4	17.4	16.2	18.1	16.4	17.8	16.8	15.8	24.7	24.7	16.8	19.7	16.2	17.2	17.9	19.2	13.0	23.8	17.9	18.9
ZrO ₂	123	2.4	2.1	3.8	1.7	3.9	0.9	0.9	2.7	0.0	0.5	2.4	2.1	2.2	2.2	6.3	6.5	3.5	1.1	2.9	0.5
TiO ₂	79.9	5.7	3.7	3.4	2.1	4.7	3.8	3.8	4.2	8.7	8.2	0.2	2.7	1.4	6.9	3.4	5.4	2.8	7.2	3.8	0.5
total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 5 of U.S. Patent 6,274,971 converted

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
SiO ₂	60	33.1	31.6	36.0	38.7	42.0	45.4	47.8	29.2	28.3	33.5	34.9	50.8	21.5	29.3	31.5	40.8	33.7	26.7	26.9	38.0
B ₂ O ₃	70	23.1	26.5	29.7	26.4	23.4	30.2	27.7	22.9	23.9	26.8	25.7	22.1	40.3	22.1	29.2	18.5	28.3	30.6	29.5	27.4
Na ₂ O	82	5.2	6.6	4.2	3.3	3.7	0.8	0.8	0.8	5.5	6.2	5.1	1.6	2.9	7.0	2.2	3.2	5.3	4.9	3.3	3.2
K ₂ O	94	3.6	3.9	3.0	2.6	1.9	0.4	0.4	0.1	0.0	3.5	4.1	0.5	1.6	3.8	1.0	2.0	2.6	3.5	2.4	3.1
Li ₂ O	30	2.2	1.3	0.3	3.6	0.2	0.2	1.0	0.2	2.0	0.0	0.0	1.2	5.2	9.1	4.5	3.3	1.8	1.5	0.5	0.3
BaO	153	6.2	8.7	6.3	6.3	6.7	5.8	5.8	8.0	8.0	11.8	7.7	6.2	6.1	8.6	6.3	7.7	7.9	3.9	13.4	9.4
ZnO	81	19.8	16.5	15.0	16.3	15.1	16.0	15.0	14.6	23.1	23.4	16.5	18.6	14.8	15.6	16.5	17.9	12.2	21.7	18.1	17.9
ZrO ₂	123	1.5	1.3	2.3	1.0	2.4	0.5	0.5	1.6	0.0	0.3	1.6	1.3	1.3	1.3	3.8	4.0	2.2	0.7	1.9	0.3
TiO ₂	79.9	5.3	3.6	3.2	1.9	4.4	3.5	3.4	3.9	8.3	7.9	0.2	2.6	1.3	3.1	5.0	2.6	6.2	6.7	3.9	0.5
total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ZnO*		26.0	25.3	21.3	22.5	21.9	21.8	20.7	22.6	31.1	32.2	28.3	26.3	20.9	24.2	22.8	25.6	20.0	25.5	31.5	27.2
TiO ₂		3.2	1.9	2.4	2.6	2.2	2.8	2.6	1.8	2.9	2.7	1.4	2.4	2.4	1.8	2.6	2.3	1.5	5.6	1.4	1.9